AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A gamma camera, comprising:

a plurality of bar detector strips made of scintillating material, arranged in a stack configuration;

at least one photodetector coupled to ~~each~~ at least one end of said stack; and

a slat collimator including a plurality of elongated slats, for collimating each of said plurality of bar detector strips to receive gamma photons in only a single dimension.

2. (Currently amended) A gamma camera as set forth in claim 1, further comprising a ~~pair~~ plurality of photodetectors ~~respectively~~ each coupled to ~~each~~ at least one end of each bar detector strip of said stack.

3. (Currently amended) A gamma camera as set forth in claim 2, wherein said ~~pair of~~ photodetectors are silicon ~~strip~~ drift detectors (~~SSDs~~ SDDs).

4. (Currently amended) A gamma camera as set forth in claim 2, wherein said ~~pair of~~ photodetectors are photodiodes.

5. (Original) A gamma camera as set forth in claim 1, wherein said bar detector strips are formed of CsI.

6. (Original) A gamma camera as set forth in claim 1, wherein said photodetector is a position-sensitive photomultiplier tube (PS-PMT).

7. (Original) A gamma camera as set forth in claim 1, wherein each bar detector strip is located between individual slats of said slat collimator.

8. (Original) A gamma camera according to claim 7, wherein each of said individual slats has a length matching the length of said bar detector strips.

9. (Original) A gamma camera as set forth in claim 1, wherein said slat collimator is mounted adjacent to said stack.

10. (Original) A gamma camera according to claim 9, wherein each of said individual slats has a length matching the length of said bar detector strips in said stack, and wherein spacing between slats of said slat collimator matches dimensions of said bar detector strips.

11. (Currently amended) A gamma camera, comprising:

a plurality of bar detector strips made of scintillating material;

at least one photodetector coupled to ~~each~~ an end of each of said bar detector strips; and

a slat collimator including a plurality of elongated slats, for collimating each of said plurality of bar detector strips to receive gamma photons in only a single dimension.

12. (Currently amended) A gamma camera as set forth in claim 11, wherein said photodetectors are silicon ~~strip~~ drift detectors (~~SSDs~~ SDDs).

13. (Original) A gamma camera as set forth in claim 11, wherein said photodetectors are photodiodes.

14. (Original) A gamma camera as set forth in claim 11, wherein said bar detector strips are formed of CsI.

15. (Original) A gamma camera as set forth in claim 11, wherein each bar detector strip is located between individual slats of said slat collimator.

16. (Cancelled)

17. (Cancelled)

18. (Currently Amended) A gamma camera according to claim ~~17~~ 15, wherein each of said individual slats has a length matching the length of said bar detector strips~~, and wherein spacing between slats of said slat collimator matches dimensions of said bar detector strips~~.

19. (Currently Amended) A method of obtaining tomographic images of an object, comprising the steps of:

obtaining a plurality of sets of planar integral scintillation event data from said object at a plurality of azimuth angles of a rotating scintillation bar detector for each of a plurality of gantry angles of a gamma camera, said scintillation bar detector including

a plurality of bar detector strips made of scintillating material;

at least one photodetector coupled to ~~each~~ an end of each of said bar detector strips; and

a slat collimator including a plurality of elongated slats, for collimating each of said plurality of bar detector strips to receive gamma photons in only a single dimension; and

reconstructing said plurality of sets of planar integral scintillation event data to form a tomographic image of said object.

20. (Original) A method of obtaining tomographic images of an object, comprising the steps of:

obtaining a plurality of sets of planar integral scintillation event data from said object at a plurality of azimuth angles of a rotating scintillation detector for each of a plurality of gantry angles of a gamma camera; and

reconstructing said plurality of sets of planar integral scintillation event data to form a tomographic image of said object.

21. (New) A gamma camera according to claim 1, further comprising at least a second photodetector coupled to a second end of said stack.

22. (New) A gamma camera according to claim 2, wherein photodetectors are coupled to both ends of each bar detector strip of said stack.

23. (New) A gamma camera as set forth in claim 11, wherein said slat collimator is mounted adjacent to said plurality of bar detector strips.

24. (New) A gamma camera according to claim 23, wherein each of said elongated slats has a length matching the length of said bar detector strips, and wherein spacing between slats of said slat collimator matches dimensions of said bar detector strips.

25. (New) A gamma camera according to claim 11, wherein photodetectors are coupled to both ends of each bar detector strip of said stack.